CLAIMS

- 1. A wireless communication apparatus for receiving a communication signal that frequency-hops among a plurality of frequency bands, the wireless communication apparatus comprising:
- a frequency conversion unit for multiplying a received communication signal by a local signal composed of a hopping frequency so as to perform frequency conversion;
- a high-pass filter unit that includes parallel-arranged capacitors corresponding to frequency-hopping bands and switches connections of capacitors in synchronization with frequency hopping; and
- a reception processing unit for performing reception processing on a received signal that has passed through the high-pass filter unit
- 2. The wireless communication apparatus according to claim 1, wherein the communication signal is an ultra-wideband signal obtained by carrying transmission information over a wide frequency band.
- 3. The wireless communication apparatus according to claim 1, wherein the communication signal is an OFDM signal obtained by allocating a plurality of pieces of data to carriers, modulating amplitude and phase for each carrier, and transforming carriers into signals along a time domain while maintaining orthogonality

of each carrier along a frequency domain, and wherein the reception processing unit performs OFDM demodulation.

- 4. The wireless communication apparatus according to claim 1, wherein the high-pass filter unit has a time difference at the time of switching connections of capacitors so as not to simultaneously connect two or more capacitors in parallel in synchronization with frequency hopping.
- 5. The wireless communication apparatus according to claim 1, wherein the high-pass filter unit has a parasitic-capacitance elimination unit for eliminating parasitic capacitance at the time of disconnecting each capacitor.